A S S I G N M E N T

WHEREAS, we, Mohammad Reza Hajaligol, Seetharama Charyulu Deevi, Sarojini Dharmarao Ariprala, Donald Bruce Losee, Bruce Earl Waymack and Michael Lee Watkins, residing respectively at

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made an invention in:

Chemical Heat Source Comprising Metal Nitride, Metal Oxide and Carbon

and are about to make application for United States Letters Patent therefor, the same being executed by us on even date herewith; and

WHEREAS, PHILIP MORRIS INCORPORATED, a corporation organized and existing under the laws of the State of Virginia and having an office and place of business at 120 Park Avenue, New York, New York 10017, is desirous of acquiring the entire interest in said invention for the United States, in said United States patent application, and in any United States Letters Patent which may issue thereon; and

WHEREAS, PHILIP MORRIS PRODUCTS INC., a corporation organized and existing under the laws of the State of Virginia and having an office and place of business at 3601 Commerce Road, Richmond, Virginia 23234, is desirous of acquiring the entire interest in said invention outside of the United States, in any foreign patent applications, and in any foreign Letters Patent which may issue thereon;

NOW, THEREFORE, be it known that for and in consideration of the sum of One Dollar ($1.00) to each of us paid and other good and valuable consideration,

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the receipt and sufficiency of which is hereby acknowledged;

1. We do hereby sell, assign and transfer unto the said PHILIP MORRIS INCORPORATED, its successors, assigns and legal representatives, all right, title and interest in and to said invention and any improvements thereon for the United States, and in and to said United States patent application, including any continuations and divisions thereof, and any substitute applications therefor and all right, title and interest in and to any United States patent which may issue thereon and any reissues of the same; and we hereby authorize and request competent authorities to grant and issue any and all patents on said invention in the United States to the said PHILIP MORRIS INCORPORATED as the assignee of the entire United States interest therein.

2. We do hereby sell, assign, and transfer unto the said PHILIP MORRIS PRODUCTS INC., its successors, assigns and legal representatives, all right, title and interest in and to said invention and any improvements thereon for all foreign countries, including the right to claim priority under the International Convention based on said United States patent application, and all right, title and interest in and to every foreign patent application filed or to be filed on said invention in any foreign country, including renewals, revivals, continuations and divisions thereof, and any substitute applications therefor, and any and all patents which may issue thereon, and any reissues and extensions of the same; and we hereby authorize and request competent authorities to grant and issue any and all patents on said invention in any foreign country to the said

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PHILIP MORRIS PRODUCTS INC. as the assignee of the entire foreign interest therein.

We further agree to execute upon request of the assignees such additional documents, if any, as are necessary and proper to secure patent protection on said invention throughout all countries of the world, and to otherwise give full effect to and perfect the rights of the assignees under this Assignment.

IN TESTIMONY THEREOF, we have hereunto signed our names and affixed our seals on the dates indicated hereinafter:

11/22/1989
(Date)

M. R. Hajaligol
Mohammad Reza Hajaligol

STATE OF VIRGINIA)
: ss.:
CITY OF RICHMOND)

On this 22nd day of November, 1989, appeared before me in person the above-named Mohammad Reza Hajaligol and acknowledged the above to be his signature and that he signed, sealed and delivered the above instrument as his voluntary act and deed, and for the uses and purposes therein set forth.

Christ E Haich
Notary Public

(Notarial seal)

My Commission Expires:
2/26/93

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above instrument as his voluntary act and deed, and for the uses and purposes therein set forth.

Notary Public

(Notarial seal)

My Commission Expires:
2/26/93

11/22/1989
(Date)

Donald Bruce Losee

STATE OF VIRGINIA)
: ss.:
CITY OF RICHMOND)

On this 22nd day of November, 1989, appeared before me in person the above-named Donald Bruce Losee and acknowledged the above to be his signature and that he signed, sealed and delivered the above instrument as his voluntary act and deed, and for the uses and purposes therein set forth.

Notary Public

(Notarial seal)

My Commission Expires:
2/26/93

11/27/89
(Date)

Bruce Earl Waymack

STATE OF VIRGINIA)
: ss.:
CITY OF RICHMOND)

On this 27th day of November, 1989, appeared before me in person the above-named Bruce Earl Waymack and acknowledged the above to be his signature

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and that he signed, sealed and delivered the above instrument as his voluntary act and deed, and for the uses and purposes therein set forth.

Linda E Hall
Notary Public

(Notarial seal)

My Commission Expires:
2/26/93

11/22/89
(Date)

Michael L Watkins
Michael Lee Watkins

STATE OF VIRGINIA)
: ss.:
CITY OF RICHMOND)

On this 22ND day of November, 1989, appeared before me in person the above-named Michael Lee Watkins and acknowledged the above to be his signature and that he signed, sealed and delivered the above instrument as his voluntary act and deed, and for the uses and purposes therein set forth.

Linda E Hall
Notary Public

(Notarial seal)

My Commission Expires:
2/26/93

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